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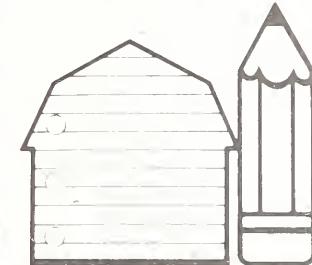
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Ag in the Classroom

Notes

A bi-monthly newsletter for the Agriculture in the Classroom Program. Sponsored by the U.S. Dept. of Agriculture to help students understand the important role of agriculture in the United States economy. For information, contact: Shirley Traxler, Director, Room 317-A, Administration Bldg., USDA, Washington, D.C. 20250-2200. 202/447-5727

United States
Department of
Agriculture



DEC. 90/JAN. 91
Vol. 7, No.1

Massachusetts: Teaching Agriculture in "Bite-Size" Pieces

Teachers know that the best way to introduce a complicated subject is to break it down into smaller steps. The Massachusetts Ag in the Classroom program has adopted the same approach for helping teachers learn more about agriculture, by developing a series of targeted lesson plans that deal with topics, including water and plants and seeds.

"Sam's Visit: The Beagle Brigade" is a series of lessons designed to accompany USDA's Animal and Plant Health Inspection Service teams as they visit classrooms. The "Sam's Visit" lessons provide learning activities appropriate for each grade level. "For children in the younger grades, the visit offers an opportunity to make geography come alive."

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says Wayne Hipsley, state contact for AITC in Massachusetts. "Students at this age are not always entirely sure where Massachusetts is on the map. Through the lesson, they use the globe to see where the food they eat comes from ... and where Massachusetts agricultural products are exported."

Hipsley believes that the "Sam's Visit" lessons could be used by other USDA inspection teams nationwide. "One of our goals in Massachusetts AITC is to develop materials that have a use outside our own state," he says.

Other new materials were developed as a result of working with commodity groups in the state. "We have found that these groups are especially inter-

New Ag Yearbook Highlights the People of Agriculture

The 1990 Yearbook of Agriculture, "Americans in Agriculture: Portraits of Diversity," takes a closer look at American agriculture's most valuable resource, its people. The Yearbook tells the story of the people of American agriculture, their jobs, their lives, their goals, and their families.

The 1990 Yearbook profiles more than 50 workers in all kinds of agricultural careers--including business, science, and government service, as well as farming. They represent the more than 20 million Americans who work in the U.S. food and fiber system.

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From the Director

Kay Torrens is leaving the Ag in the Classroom office and moving with her husband to Phoenix. She has been a devoted employee and strong supporter of Ag in the Classroom. We wish her and Norman the very best in their new adventure. We will surely miss them.

Since 1991 marks the 10th anniversary of Ag in the Classroom, I hope you will make every effort to attend this year's national conference. It will be June 8-11, 1991, at the Ramada TechWorld in downtown Washington, D.C. The telephone num-

ber for reservations is: 202-898-9000. Room rates are \$97.00 for single and \$130.00 for double occupancy including District of Columbia and room occupancy tax. In order to get the group rate, be sure you mention Ag in the Classroom when you make your reservations.

Yours Truly

Shirley Traxler

New Ag Yearbook Highlights the People of Agriculture

The Yearbook will be of particular interest to students, since it introduces them to the diversity of careers that are available in American agriculture. One section of the Yearbook focuses on the Ag in the Classroom program.

Profiles include:

- Elmer Eckart, a San Francisco teacher who makes agriculture come alive for his city students
- Elizabeth Wolanyk, who develops curriculum and trains New York teachers to integrate agriculture into many subjects
- Phil Besonen, who has developed a curriculum that helps students learn about two vital, yet seldom taught, subjects--agriculture and economics
- Jan Hoppe, the writer who produces Minnesota's highly acclaimed AgMag
- Jefferson Cotton, sheep rancher and artist, who is working with the New England/New York Ag in the Classroom Consortium to develop a poster that

shows the many aspects of the food and fiber system

- Becky Koch and Loreen McMillan who developed a Kansas State Fair exhibit that attracts thousands of children and their parents
- Betty Jo Malone, who exemplifies the impact that volunteers can have.

As a special focus, the 1990 Yearbook celebrates the centennial of the 1890 Institutions, the historically black land grant colleges and universities. It offers a history of these schools and features numerous profiles of researchers, farmers, teachers, and students connected with the schools.

Each member of Congress has limited free copies of the 1990 Yearbook, "Americans in Agriculture: Portraits of Diversity," for public distribution. Copies are also available for \$10 from the Superintendent of Documents, Washington, DC 20402. In addition, the Yearbook will be sold at government bookstores in many cities.

Massachusetts: Teaching Agriculture in "Bite-Size" Pieces

ested in supporting teaching activities that feature their products," Hipsley says. "Their interest coincides with our belief that the best way to reach teachers is by offering them activities in smaller packages making the information more manageable."

Recently, Massachusetts AITC worked with the New England Sprout Growers Association to develop a unit called "Sprouts: Indoor Farming," which helps students learn about seed germination and nutrition. It is accompanied by a sprouting kit which includes everything a class of students needs to grow their own food.

"Teachers especially appreciate the fact that the kit makes teaching science easy and nonthreatening," Hipsley says. He cites studies showing that the typical elementary school teacher

takes fewer than 10 hours of undergraduate science courses. "I tell them that they don't need a lot of science to get started with the sprout project," he says, "but they'll be scientists when they are through."

Hipsley says that by offering a series of workshops for teachers, "We keep the subject fresh and new." One way to judge the success of the program is the growing number of teachers who sign up for more than one workshop. "They are constantly looking for ways to improve their teaching," Hipsley notes. "That says a lot about them... and a lot about our program."

For more information, write the New England Sprout Growers Association, P.O. Box 270, Marion, Massachusetts 02738.

Spotlight

Maryland Teacher Uses Technology to Help Students' Interest Grow

"If students don't touch it, they're not going to learn it," says Bob Keenan, a teacher at Lansdowne High School in Baltimore County, Maryland. To help his students learn horticulture, flower design, and urban forestry and wildlife, Keenan has developed a teaching technique ranging from interactive video to hands-on learning to computer assisted instruction.

"I consider myself a successful teacher if I don't spend more than 10 minutes in front of any class," Keenan says. He has developed a variety of in-class activities that keep his students learning. For example, every student uses the computer to complete a research paper. They must use the computer for every phase of the work, from keeping notes through alphabetizing the bibliography. "The purpose of the assignment is to help students learn to use the computer as a tool--while they're learning about some aspect of the subject we're studying."

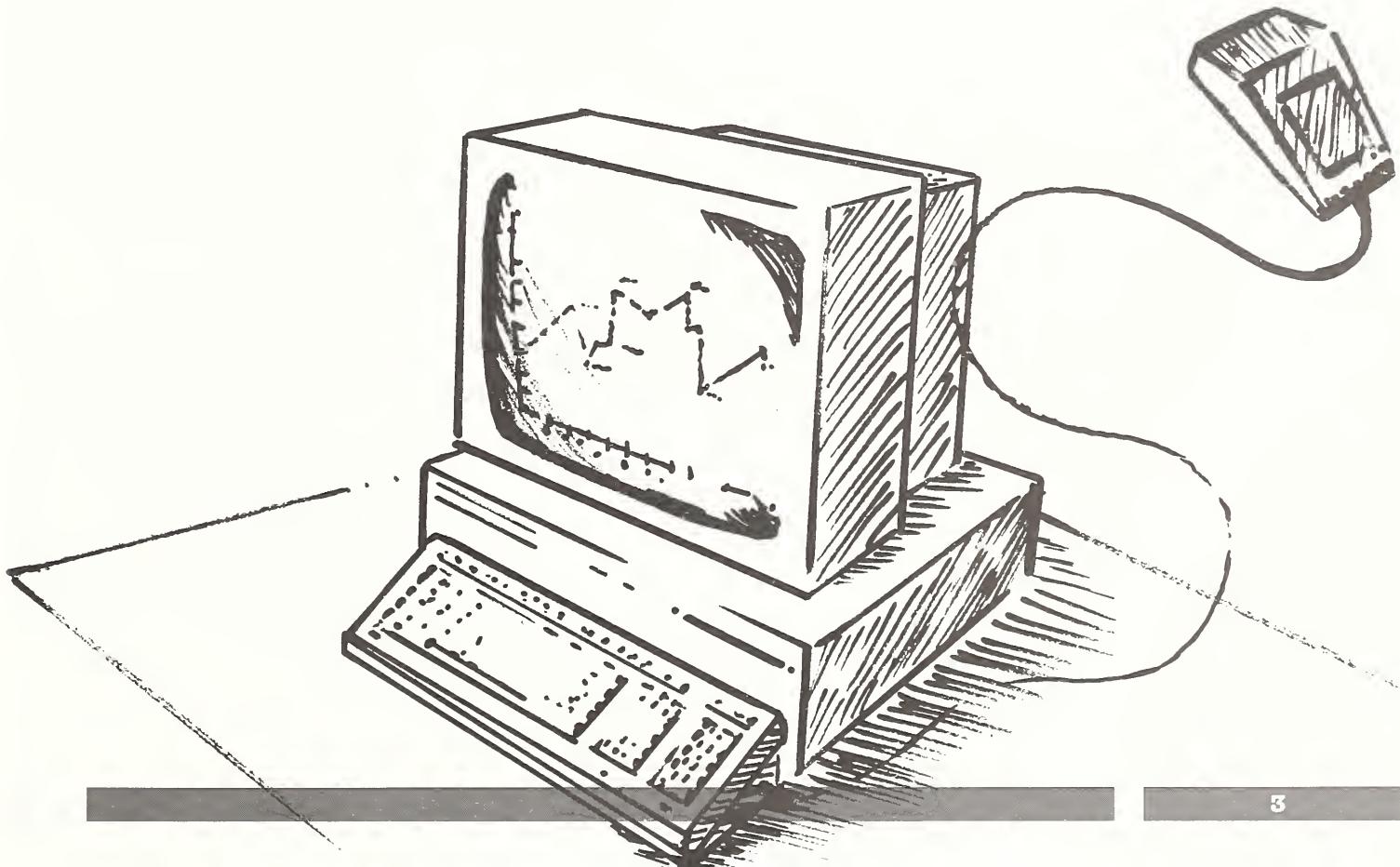
Keenan uses his students as teachers when nearby elementary school students tour the greenhouse. "The best way to learn a subject is to teach it," he says. Elementary students are paired with

high schoolers, who show them how to transplant a plant and how to make a cutting. Some of Keenan's students have become so friendly with their younger counterparts that they have become pen pals and exchange notes throughout the year.

Each student spends at least 30 hours per semester working on the computer. Keenan has developed a number of instructional programs. One, "How to Make a Corsage," has been made available to teachers across the state through the Maryland Ag in the Classroom program.

Keenan has been a strong supporter of the AITC program and served as a resource teacher at last summer's first state teacher workshop. He plans to return again this summer. "I have never seen such enthusiastic teachers in my life," he says.

Keenan's approach to teaching requires dedication and extra time. "It's a lot easier to lecture to students for 50 minutes every day," Keenan says. Still, he sees the rewards. "When students learn something, they have a chance to try it out right away," he says. "Then we both know they've learned something."



Missouri Materials Combine Good Nutrition, Good Education

In Missouri, the answer to the question, "Where's the Beef?" is, "In the classroom." Materials developed by the Missouri Beef Industry Council help the state's fifth graders learn more about nutrition, science, and the role of beef in a healthy diet.

Last year, the Council developed an instructional package for fifth graders. Based on its success, the group has developed enrichment activities for each grade this year. "Our Beef Ambassadors leave these enrichment activities with teachers after they visit a classroom," says Susie Oberdahlhoff, Consumer Relations Coordinator for the Council. "We hope to add activities for each grade level every year so that eventually teachers will have a complete library available to them."

In developing the materials, Oberdahlhoff says, the Council worked closely with a consultant from the state Department of Education. As a result of

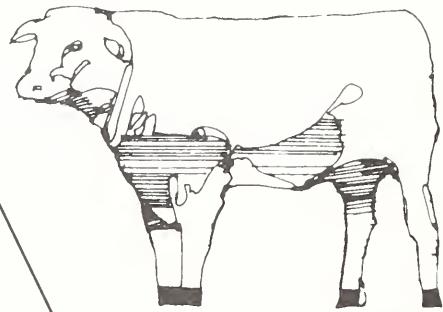
that collaboration, the activities for each grade are aligned with the skills identified in the State Guide to Key Skills and Core Competencies which set out specific learning objectives for each subject at each grade level. That has proven to be a critical factor in getting teachers to use the teaching package.

Teachers are not necessarily impressed when I tell them we have classroom materials available," Oberdahlhoff says. "But when I tell them our materials fit within the Core Competencies, their eyes light up.

In working with teachers, Oberdahlhoff says, they have identified a particular need for nutrition education materials. "Teachers know the importance of good nutrition, and they are constantly looking for ways to make this important subject more meaningful for their students," she says.

Student Worksheet #3: Story Problems A Farmer's Day

Name _____


Instructions:

Complete the following story problems. Show all of your work

Today's farmer wears many different hats. During an average day, a farmer must act as a chemist, a veterinarian, a banker, a botanist, an entomologist and a mechanic. Meet Joe Farmer. Joe raises pigs, cattle and chickens on his farm. To feed the animals, he also raises corn and alfalfa hay. Here are a few of the ways Joe applies his knowledge of math to his operation.

1. Joe has 75 pigs and feeds each pig 12 pounds of feed a day. The feed consists of 75% corn, 15% soybeans and 10% vitamin and mineral supplement. How many pounds of each ingredient does Joe feed his pigs every day?

If corn is worth \$0.09 per pound, soybeans are worth \$.12 per pound and the supplement costs \$12.25 per cwt., how much will it cost Joe to feed his 75 pigs per day? (cwt. = one hundred pounds)

2. Joe keeps his laying hens (chickens) in 200 cages of 3. Each hen lays 250 eggs a year. How many eggs will Joe receive in a year? How many dozen would that be?

Joe keeps his laying hens (chickens) in 200 cages of 3. Each hen lays 250 eggs a year. How many eggs will Joe receive in a year? How many dozen would that be?

3. Joe sells his eggs for \$5.70 a dozen, how much will he receive if he sells 700 dozen eggs?

Joe sells his eggs for \$5.70 a dozen, how much will he receive if he sells 700 dozen eggs?

4. Joe owns 200 brood cows each of which can produce one calf per year. If his cows have a successful calving rate of 93%, how many calves will Joe's cows raise each year?

Joe owns 200 brood cows each of which can produce one calf per year. If his cows have a successful calving rate of 93%, how many calves will Joe's cows raise each year?

5. Joe sells 75% of his calves, keeping only the best animals breeding purposes. How many calves does Joe sell each year, Joe sells 54 pounds of corn. If a bushel of corn weighs 54 pounds, how many pounds of corn

Vegetable Growing Technique That's Out of This World

A salad bar in space? The possibility is getting closer with a technique that will eventually provide a variety of fresh vegetables for astronauts on long voyages.

One of the first things that astronauts or submariners request after a long voyage--and weeks of eating freeze-dried foods--is plenty of fresh produce. So the National Aeronautics and Space Administration's Ames Research Center in Mountain View, California, is experimenting with ways to provide crew members on long space voyages enough vegetables to prepare three salads per person per week.

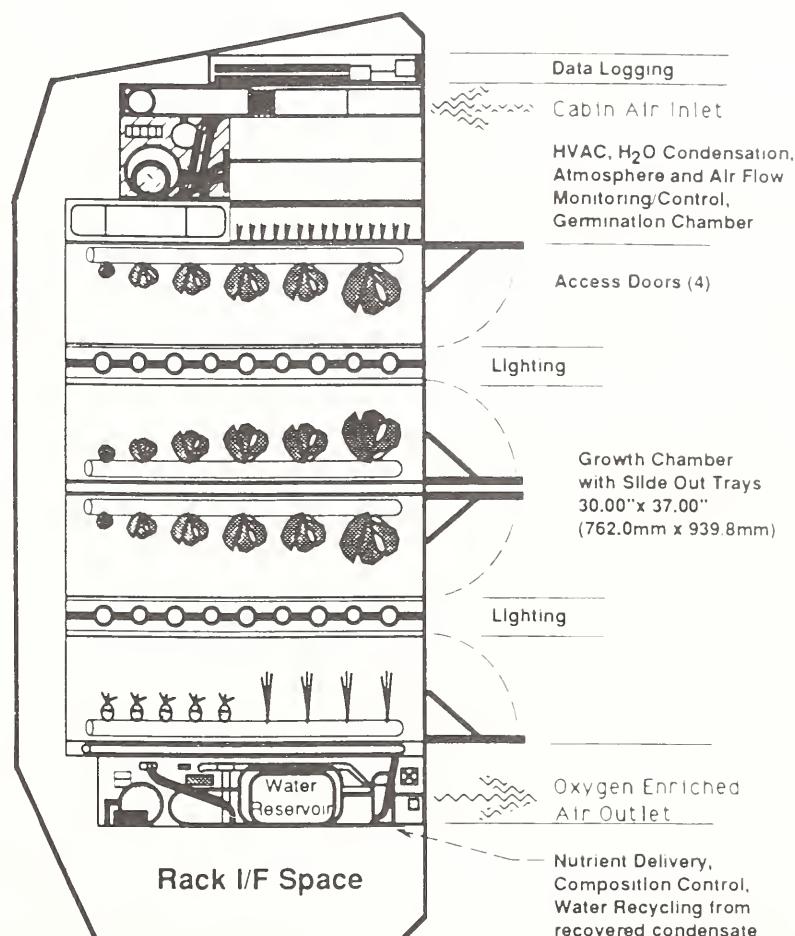
Leaf lettuce, carrots, radishes, onions, sprouts, tomatoes, peppers, and cucumbers are all possibilities for space growth. Vegetables must have similar growing requirements to simplify the environmental control systems.

Researchers face some formidable challenges in developing the growing system. Varieties may be smaller than their Earth™ bound counterparts, since the entire "salad machine" will measure only 36" x 41.5" x 80". But, since there is no gravity in space, some vegetables can grow "upside down" or "sideways." (In the weightlessness of space, there actually is no real "up" or "down.")

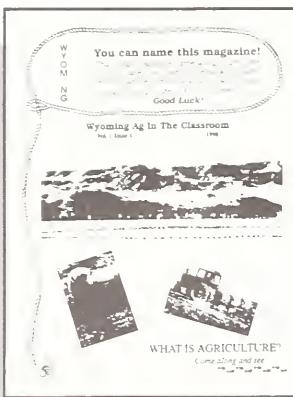
The system will adapt techniques used by commercial hydroponic growers, which yield mature plants in a short time. Proper humidity will be maintained by recycling condensed water vapor.

Besides the obvious nutritional benefits, NASA scientists believe that the salad growing machine will offer other benefits to astronauts on long voyages. The growing system will furnish oxygen-enriched air to the cabin environment.

The presence of plants may also improve crew members' morale. Tending the "space garden" will provide astronauts with a creative outlet during their free time, much like tending a garden on Earth.



Wyoming's Magazine Takes Students "From Country to Classroom"

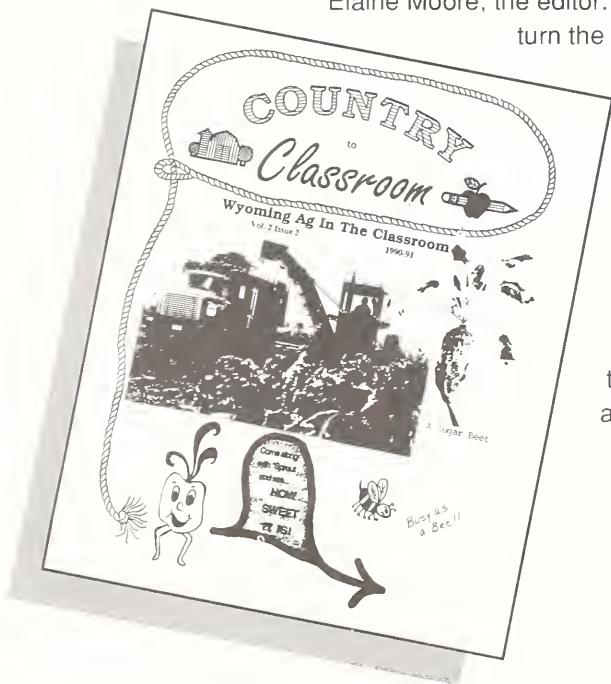


Wyoming is known as the "Equality State," and its state motto is "Equal Rights." So it's not surprising that when the state's Ag in the Classroom program was looking for a name for its new agricultural magazine, the process would involve a democratic election. First, students from across the state were invited to submit their ideas for names. The board chose the top six contenders, and then all members of Wyoming AITC were invited to vote for their favorite. Both the name ("From Country to Classroom") and the magazine itself have proven to be winners with the state's teachers and students.

More than 20,000 copies of the magazine--enough for every fourth and fifth grader in the state--are distributed four times a year. "The magazine is the most cost-effective way we have found of reaching students in our state," says Gene Pexton, state contact for AITC in Wyoming.

Each magazine has an accompanying teacher's guide "designed with busy teachers in mind," says Elaine Moore, the editor. Along with tips on how to

turn the magazine into an enjoyable and educational in-class activity, the magazine includes background information for teachers, reproducible student activity sheets, and information on how the magazine's various stories can be integrated into the fourth and fifth grade curriculum.



Although the magazine works best when it is a part of a teacher-directed activity, Moore also realizes that some teachers assign it as homework. "I want kids to be able to complete it by themselves and not be frustrated," she says. Word games, mazes, and jokes help keep student interest high. Topics for the 1990-91 school year include:

- For Land and Water's Sake, introducing students to the importance of caring for our natural resources
- How Sweet It Is, the story of Wyoming's sugar beet industry
- Global Agriculture, helping students see how Wyoming agriculture fits into the global economy
- The Weather and Climate, helping students understand more about the impact of weather

"All our activities are directed toward enhancing the basic curriculum through agriculture," says Susan Sherman, newly hired executive director for Wyoming AITC. "Teachers tell us that the magazine is successful in meeting that goal."

Wyoming is reaching out to teachers in other ways as well. This summer, the University of Wyoming will offer a course called "Agriculture Science for Elementary Teachers-Curriculum Development." The class will show teachers how to use hands-on agriculture-related activities that can help elementary school students learn more science. The course will continue to be offered each semester so that aspiring teachers can begin to learn something about agriculture ... before they ever set foot in a classroom.



New Maryland Foundation Provides the Building Blocks for Agricultural Literacy

The Maryland Agricultural Education Foundation (MAEF) is less than two years old, but it has already sponsored a successful workshop that attracted teachers from across the state and launched a comprehensive project to develop curriculum frameworks for agricultural education. The Foundation has also launched a comprehensive public awareness effort to help Maryland citizens understand the impact of agriculture on the state's economy.

A summer teacher workshop showed upper elementary teachers how to integrate agriculture into their curriculums. But for many, it also opened their eyes to the high-tech nature of agriculture today ... and to the career opportunities available in the food and fiber industry. "It never entered my mind that agriculture studies could prepare youngsters for employment right after high school," said Margoe Massie, a Queen Anne's County teacher who took part in the summer workshop.

The Foundation has scheduled another workshop this summer and also plans to bring teachers together for at least one follow up meeting each year. "We hope to build a cohesive group of people who can provide communication links throughout the state," says Richard Price, MAEF vice president. The curriculum development project is one result of a blue-ribbon commission appointed by the Governor to evaluate the state's agricultural education programs. The commission's report included 65 recommendations for strengthening agricultural literacy in the state's public schools.

Following the publication of the report, the state superintendent appointed an advisory task force to develop curriculum frameworks for agriculture across grades and subject matters. "We need to do that before we can develop the curriculum," Price says.

MAEF funding comes from farmers, the state Department of Agriculture, and the corporate sector. Southern States Cooperative has pledged its support and has donated office space.



One of the main attractions at this year's Mississippi State Fair was the Ag in the Classroom exhibit. More than half a million students, teachers, and parents visited the exhibit during the eleven days of the fair. Students took away activity brochures and commodity puzzles. Teachers registered for free Farm and Food Bytes software programs. More than 50 Farm Bureau women volunteers helped with the display.

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The individuals listed here are key reference persons in each state. If you have any questions, want to make reports, or need more information about your state's Ag in the Classroom program, contact the following:

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Ag in the Classroom Notes

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